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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,545	08/30/2001	Peter Betz	IN-5516	7926

26922 7590 04/29/2004

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EXAMINER
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FLETCHER III, WILLIAM P

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 04/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/914,545	<b>Applicant(s)</b> BETZ ET AL.	
	<b>Examiner</b> William P. Fletcher III	<b>Art Unit</b> 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 17-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 17-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see the amendment and response, filed 4/12/2004, with respect to the objections to the specification and rejections of the claims under 35 U.S.C. § 112, 2<sup>nd</sup> Paragraph, have been fully considered in view of applicant's amendment and are persuasive. These objections and rejections have been withdrawn.

2. Applicant's arguments filed 4/12/2004, with respect to the rejections of the claims under 35 U.S.C. § 103(a), have been fully considered but they are not persuasive.

3. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the feature upon which applicant relies (i.e., that the sol-gel coating material is a mixture of materials, not an interpenetrating network of materials) is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. **Claims 1–13 and 17–32 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,385,988 A (Yamamoto et al.) in view of US 5,973,068 A (Yamaya et al.) and *vice versa*.**

With respect to claims 1, 5, 6, 8, and 20–32:

Reference 988 teaches a composite coating composition obtained by polymerizing a radical-polymerizable vinyl compound in the presence of a polycondensate formed by hydrolysis and polycondensation of at least one alkoxysilane compound of the general formula  $\text{SiR}^1_a\text{R}^2_b(\text{OR}^3)_c$  (abstract, 1:50–68, and 3:3–5:62). This satisfies applicant's formula I because  $\text{R}^1$  and  $\text{R}^2$  are non-hydrolyzable hydrocarbon groups while  $\text{R}^3$  may be hydrogen or a hydrocarbon group, making the  $\text{OR}^3$  either a hydroxyl or hydrolysable alkoxy group (1:50–68 and 3:3–5:62). The alkoxysilane may be used in combination with a compound co-condensable therewith, including metal alkoxides and metal chelates (5:63–6:3). Specific examples include: titanium tetraethoxide, titanium tetraisopropoxide, zirconium tetraethoxide, zirconium tetra-*n*-butoxide, and aluminum triisopropoxide (6:7–12). These compounds satisfy applicant's claimed formula II.

Reference 068 teaches a composite coating composition obtained by polymerizing a solution containing a radical polymerizable vinyl monomer and a silicone resin and formed by hydrolysis and polycondensation of at least one hydrolysable silane of the general formula

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$R^1_m R^2_n Si(OH)_p (OX)_q O_{(4-m-n-p-q)/2}$  (abstract and 3:49–7:20). This satisfies applicant's formula I because  $R^1$  and  $R^2$  are non-hydrolyzable hydrocarbon groups, OH is a hydroxyl group, and OX is a hydrolysable group (4:5–18). The radical polymerizable vinyl monomers may be combinations of two or more (meth)acrylic esters (10:38–42, a), ethylenically unsaturated monomers containing hydroxyl groups (10:44–46, c and 53–55, f), and ethylenically unsaturated monomer containing acid groups (10:42–44, b). Since applicant has not disclosed the maximum permissible number of acid groups and since this reference explicitly recites acid groups when they are present, it is the examiner's position that, absent evidence to the contrary, the (meth)acrylic ester and hydroxyl-containing ethylenically unsaturated monomers of this reference are inclusive of and read on being "substantially free of acid groups."

While reference 988 teaches vinyl monomers that individually meet the limitations of applicant's components (a1)–(a3), this reference does not teach an acrylate copolymer solution that that is the reaction product of (a1)–(a3). As noted above, 068 teaches a similar composite coating composition in which the radical polymerizable vinyl monomers for just such a reaction product. Since both references are drawn to composite coating compositions containing radical polymerizable vinyl monomers and hydrolysable silanes, it would have been obvious to one of ordinary skill in the art to modify the method of reference 988 so as to utilize, as the radical polymerizable vinyl monomers, those taught by reference 068. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of successfully forming a composite coating composition.

Further, reference 068 teaches all the limitations of this claim except that the silane is hydrolyzed, condensed, and complexed with the hydrolysable metal compound of applicant's

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formula II. As noted above, reference 988 teaches a similar composite coating composition in which the silane is hydrolyzed, condensed, and complexed with metal alkoxides or chelates satisfying applicant's formula II. Since both references are drawn to composite coating compositions containing radical polymerizable vinyl monomers and hydrolysable silanes, it would have been obvious to one of ordinary skill in the art to modify the method of reference 068 so as to further include those metal alkoxides or chelates taught by reference 988. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of successfully forming a composite coating composition.

With respect to claims 2, 20, and 25, neither reference requires the presence of aromatics in the composite coating compositions.

With respect to claims 3, 20, and 25, reference 988 teaches the relative amounts claimed by applicant (6:3–6 and 7:30–46).

With respect to claims 4, 20, and 25, neither reference explicitly teaches the solids content claimed. It is the examiner's position that solids content is a result-effective variable effecting properties of the coating such as viscosity. Absent evidence of unexpected results demonstrating the criticality of the claimed solids content, it would have been obvious to one of ordinary skill in the art to modify the method of reference 988 in view of reference 068, and *vice versa*, so as to optimize this result-effective variable by routine experimentation (see MPEP § 2144.05(II)).

With respect to claims 7, 19, and 21–26 reference 988 teaches that  $R^{1-2}$  may contain ether or ester functional groups (1:60–68). Reference 068 also teaches that the non-hydrolyzable groups may contain functional groups (8:65–10:33 and 11:20–60).

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With respect to claims 9, 20, and 25, both references 988 and 068 teach that the composite coating composition is clear (988, 1:47 and 9:6; 068, 21:13–57).

With respect to claim 10, reference 068 refers to the composite coating composition as “mar-resistant” (1:10) while reference 988 refers to the coating having a “high toughness” (1:46).

With respect to claims 11, 12, 17, 18, 24, 25, and 27–32 both references 988 and 068 teach that the composite coating composition is applied to a substrate in at least one coat as an automotive, industrial, or plastic coating (988, 1:1–42; 068, 21:13–57).

With respect to claims 13 and 24, both references teach applying the composite coating compositions to surfaces and curing them. In particular, reference 068 teaches that the composition may be used as a paint top-coating or as an automotive electrodeposition coat (21:13–51). Although neither reference teaches that the coating composition is applied and cured atop a paint system, it is well known that, in applications such as those cited above, multi-layer coatings are common, with the top or electrodeposition coat coated and cured atop other paint layers. Consequently, it would have been obvious to one of ordinary skill in the art, in using the composite coating compositions according to the suggestion of reference 068, to have applied and cured it atop a paint system.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Fletcher III whose telephone number is (571) 272-1419. The examiner can normally be reached on Monday through Friday, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*WPF 4/25/2004*

William P. Fletcher III  
Examiner  
Art Unit 1762

*[Signature]*  
**SHRIVE P. BECK**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 1700**